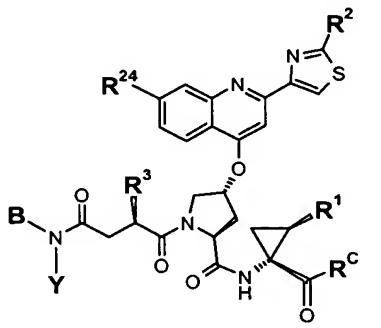


CLAIMS

1. A racemate, diastereoisomer, or optical isomer of a compound of formula (I):



wherein:

- 5 **B** is (C₂₋₁₀)alkyl, (C₃₋₇)cycloalkyl or (C₁₋₄)alkyl-(C₃₋₇)cycloalkyl,
a) wherein said cycloalkyl and alkyl-cycloalkyl may be mono-, di- or tri-
substituted with (C₁₋₃)alkyl; and
b) wherein said alkyl, cycloalkyl and alkyl-cycloalkyl may be mono- or di-
substituted with substituents selected from hydroxy and O-(C₁₋₄)alkyl; and
10 c) wherein each of said alkyl groups may be mono-, di- or tri-substituted with
halogen; and
d) wherein in each of said cycloalkyl groups being 5-, 6- or 7-membered, one
or two -CH₂-groups not being directly linked to each other may be
replaced by -O- such that the O-atom is linked to the N atom to which B is
15 attached via at least two C-atoms;
or
B is phenyl, (C₁₋₃)alkyl-phenyl, heteroaryl or (C₁₋₃)alkyl-heteroaryl, wherein the
heteroaryl-groups are 5- or 6-membered having from 1 to 3 heteroatoms
selected from N, O and S; wherein said phenyl and heteroaryl groups may
20 be mono-, di- or trisubstituted with substituents selected from halogen, -OH,
(C₁₋₄)alkyl, O-(C₁₋₄)alkyl, S-(C₁₋₄)alkyl, -NH₂, -NH((C₁₋₄)alkyl) and -N((C₁₋₄)
alkyl)₂, -CONH₂ and -CONH-(C₁₋₄)alkyl;

Y is H or (C₁₋₆)alkyl;
25 **R³** is (C₁₋₆)alkyl, (C₃₋₇)cycloalkyl or (C₁₋₃)alkyl-(C₃₋₇)cycloalkyl, wherein each of
said cycloalkyl groups may be mono-, di- or tri-substituted with substituents
selected from halogen, -OH, (C₁₋₄)alkyl, O-(C₁₋₄)alkyl, S-(C₁₋₄)alkyl, -NH₂, -

NH((C₁₋₄)alkyl), -N((C₁₋₄)alkyl)₂, -COOH and -CONH₂;

- R²** is **R²⁰**, -NR²¹R²², -NR²²COR²⁰, -NR²²COOR²⁰ or -NR²²CONR²³R²¹, wherein **R²⁰** is selected from (C₁₋₈)alkyl, (C₃₋₇)cycloalkyl and (C₁₋₄)alkyl-(C₃₋₇)cycloalkyl, wherein said alkyl, cycloalkyl and alkyl-cycloalkyl may be mono-, di- or tri-substituted with (C₁₋₃)alkyl; and **R²¹** is H or **R²⁰**, **R²²** and **R²³** are independently selected from H and methyl, and
- R²⁴** is selected from -O-(C₁₋₄)alkyl, -NH((C₁₋₄)alkyl) and -N((C₁₋₄)alkyl)₂;
- R¹** is (C₁₋₆)alkyl or (C₂₋₆)alkenyl; and
- R^c** is hydroxy or NHSO₂R^s wherein **R^s** is (C₁₋₆)alkyl, (C₃₋₇)cycloalkyl, (C₁₋₆)alkyl-(C₃₋₇)cycloalkyl, phenyl, naphthyl, pyridinyl, (C₁₋₄)alkyl-phenyl, (C₁₋₄)alkyl-naphthyl or (C₁₋₄)alkyl-pyridinyl; all of which optionally being mono-, di- or tri-substituted with substituents selected from halogen, hydroxy, cyano, (C₁₋₄)alkyl, O-(C₁₋₆)alkyl, -CO-NH₂, -CO-NH((C₁₋₄)alkyl), -CO-N((C₁₋₄)alkyl)₂, -NH₂, -NH((C₁₋₄)alkyl) and -N((C₁₋₄)alkyl)₂, wherein (C₁₋₄)alkyl and O-(C₁₋₆)alkyl are optionally mono-, di- or trisubstituted with halogen; and all of which optionally being monosubstituted with nitro;
- or a pharmaceutically acceptable salt or ester thereof.

2. The compound according to claim 1, wherein
- B** is (C₂₋₁₀)alkyl, (C₃₋₇)cycloalkyl or (C₁₋₄)alkyl-(C₃₋₇)cycloalkyl,
- a) wherein said cycloalkyl and alkyl-cycloalkyl may be mono-, di- or tri-substituted with (C₁₋₃)alkyl; and
- b) wherein said alkyl, cycloalkyl and alkyl-cycloalkyl may be mono- or di-substituted with substituents selected from hydroxy and O-(C₁₋₄)alkyl; and
- c) wherein all said alkyl-groups may be mono-, di- or tri-substituted with halogen; and
- d) wherein in said cycloalkyl-group being 5-, 6- or 7-membered, one or two -CH₂-groups not being directly linked to each other may be

replaced by -O- such that the O-atom is linked to the N atom to which B is attached via at least two C-atoms;

or

- B** is phenyl, (C₁₋₃)alkyl-phenyl, heteroaryl or (C₁₋₃)alkyl-heteroaryl, wherein the heteroaryl-groups are 5- or 6-membered having from 1 to 3 heteroatoms selected from N, O and S; wherein said phenyl and heteroaryl groups may be mono-, di- or trisubstituted with substituents selected from halogen, -OH, (C₁₋₄)alkyl, O-(C₁₋₄)alkyl, S-(C₁₋₄)alkyl, -NH₂, -NH((C₁₋₄)alkyl) and -N((C₁₋₄)alkyl)₂, -CONH₂ and -CONH-(C₁₋₄)alkyl;
- Y** is H or (C₁₋₆)alkyl;
- R³** is (C₁₋₆)alkyl, (C₃₋₇)cycloalkyl or (C₁₋₃)alkyl-(C₃₋₇)cycloalkyl, wherein said cycloalkyl groups may be mono-, di- or tri-substituted with substituents selected from halogen, -OH, (C₁₋₄)alkyl, O-(C₁₋₄)alkyl, S-(C₁₋₄)alkyl, -NH₂, -NH((C₁₋₄)alkyl) and -N((C₁₋₄)alkyl)₂, -COOH and -CONH₂;
- R²** is **R²⁰** is -NR²¹R²², -NR²²COR²⁰, -NR²²COOR²⁰ and -NR²²CONR²³R²¹, wherein **R²⁰** is selected from (C₁₋₈)alkyl, (C₃₋₇)cycloalkyl and (C₁₋₄)alkyl-(C₃₋₇)cycloalkyl, wherein said cycloalkyl and alkyl-cycloalkyl may be mono-, di- or tri-substituted with (C₁₋₃)alkyl; and **R²¹** is H or **R²⁰**, **R²²** and **R²³** are independently selected from H and methyl, and
- R²⁴** is selected from: -O-(C₁₋₄)alkyl, NH((C₁₋₄)alkyl) and -N((C₁₋₄)alkyl)₂;
- R¹** is (C₁₋₆)alkyl or (C₂₋₆)alkenyl; and
- R^c** is hydroxy or NHSO₂R^s wherein **R^s** is (C₁₋₆)alkyl, (C₃₋₇)cycloalkyl or (C₁₋₆)alkyl-(C₃₋₇)cycloalkyl, phenyl, naphthyl, pyridinyl, (C₁₋₄)alkyl-phenyl, (C₁₋₄)alkyl-naphthyl or (C₁₋₄)alkyl-pyridinyl; all of which being optionally mono-, di- or tri-substituted with substituents selected from halogen, hydroxy, cyano, (C₁₋₄)alkyl, O-(C₁₋₆)alkyl, -CO-NH₂, -CO-

NH((C₁₋₄)alkyl), -CO-N((C₁₋₄)alkyl)₂, -NH₂, -NH((C₁₋₄)alkyl) and -N((C₁₋₄)alkyl)₂; and all of which optionally being monosubstituted with nitro;

5 or a pharmaceutically acceptable salt or ester thereof.

3. The compound according to claim 1, wherein **B** is (C₂₋₁₀)alkyl, (C₃₋₇)cycloalkyl, (C₁₋₃)alkyl-(C₃₋₇)cycloalkyl or phenyl,
- 10 a) wherein said cycloalkyl, alkyl-cycloalkyl and phenyl may be mono-, di- or tri-substituted with (C₁₋₃)alkyl; and
- b) wherein said alkyl, cycloalkyl, alkyl-cycloalkyl and phenyl may be mono- or di-substituted with substituents selected from hydroxy and O-(C₁₋₄)alkyl; and
- 15 c) wherein each of said alkyl-groups and phenyl may be mono-, di- or tri-substituted with fluorine or mono-substituted by chlorine or bromine, and
- d) wherein in each of said cycloalkyl-groups being 5-, 6- or 7-membered, one or two -CH₂-groups not being directly linked to each other may be replaced by -O- such that the O-atom is linked to the N atom to which **B** is attached via at least two C-atoms.
- 20
4. The compound according to claim 3, wherein **B** is selected from ethyl, n-propyl, i-propyl, n-butyl, 1-methylpropyl, 2-methylpropyl, *tert*-butyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl, cyclohexylmethyl and phenyl;
- 25 a) wherein each of said groups optionally being mono-, di- or tri-substituted with substituents selected from methyl and ethyl;
- b) wherein each of said groups optionally being mono- or di-substituted with substituents selected from hydroxy, methoxy and ethoxy; and
- 30 c) wherein each of said alkyl groups and phenyl may be mono-, di- or tri-substituted with fluorine or mono-substituted by chlorine or bromine; and
- d) wherein in each of said cycloalkyl-groups being 5-, 6- or 7-membered, one or two -CH₂-groups not being directly linked to each other may be replaced by -O- such that the O-atom is linked to the N atom to which **B** is attached via at least two C-atoms.

5. The compound according to claim 3 wherein **B** is (C₃₋₈)alkyl, (C₅₋₆)cycloalkyl, or phenyl, wherein each of said groups may be mono- or di-substituted with methyl.
- 5 6. The compound according to claim 3 wherein **B** is selected from 1,1-dimethylethyl, 1,1-dimethylpropyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, 1-methylcyclopentyl, 1-methylcyclohexyl and phenyl.
- 10 7. The compound according to claim 1 wherein **Y** is H.
8. The compound according to claim 1, wherein **R**³ is (C₁₋₃)alkyl, (C₃₋₇)cycloalkyl or (C₁₋₆)alkyl-(C₃₋₇)cycloalkyl, wherein each of said cycloalkyl groups are optionally substituted by 1 to 3 substituents selected from (C₁₋₄)alkyl.
- 15 9. The compound according to claim 8, wherein **R**³ is selected from 1-methylethyl, 1,1-dimethylethyl, 1-methylpropyl, 2-methylpropyl, 1,1-dimethylpropyl, 1,2-dimethylpropyl, 2,2-dimethylpropyl, cyclopentyl, cyclohexyl, 1-methylcyclopentyl, 1-methylcyclohexyl, cyclopentylmethyl, cyclohexylmethyl, (1-methylcyclopentyl)methyl and (1-methylcyclohexyl)methyl.
- 20 10. The compound according to claim 9, wherein **R**³ is selected from 1,1-dimethylethyl, cyclopentyl, cyclohexyl and 1-methylcyclohexyl.
- 25 11. The compound according to claim 1, wherein **R**² is **R**²⁰, -**NR**²¹**R**²², -**NR**²²**COR**²⁰, -**NR**²²**COOR**²⁰ or -**NR**²²**CONR**²³**R**²¹, wherein **R**²⁰ is selected from (C₁₋₄)alkyl, (C₃₋₇)cycloalkyl and (C₁₋₃)alkyl-(C₃₋₇)cycloalkyl, wherein said alkyl, cycloalkyl and alkyl-cycloalkyl may be mono-, di- or tri-substituted with (C₁₋₃)alkyl; and **R**²¹ is H or **R**²⁰; and **R**²² and **R**²³ are independently selected from H and methyl.
- 30 12. The compound according to claim 11, wherein **R**² is -**NHR**²¹ or -**NHCOR**²⁰,

wherein R^{20} and R^{21} are defined as in claim 11.

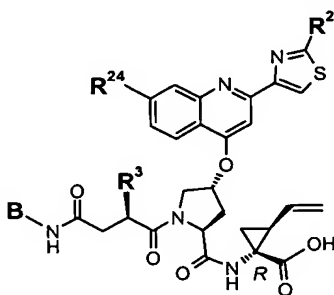
13. The compound according to claim 12, wherein R^{20} and R^{21} are independently selected from: methyl, ethyl, n-propyl, i-propyl, n-butyl, 1-methylpropyl, 2-methylpropyl, *tert*-butyl, 2,2-dimethylpropyl, 1,1-dimethylpropyl, 1,2-dimethylpropyl, 1,2,2-trimethylpropyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, each of which optionally being mono- or di-substituted with methyl or ethyl.
14. The compound according to claim 1, wherein R^{24} is selected from OCH_3 and $N(CH_3)_2$.
15. The compound according to claim 1, wherein R^1 is ethyl or vinyl.
16. The compound according to claim 1, wherein R^C is selected from hydroxy or $NHSO_2R^S$ wherein R^S is methyl, ethyl, n-propyl, i-propyl, n-butyl, 1-methylpropyl, 2-methylpropyl, *tert*-butyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl, cyclohexylmethyl, phenyl, naphthyl, pyridinyl, phenylmethyl, naphthylmethyl or pyridinylmethyl, each of which optionally being substituted with one or more substituents selected from
 - a) one, two or three substituents selected from fluorine and methyl;
 - b) one or two substituents selected from hydroxy, trifluoromethyl, methoxy and trifluoromethoxy; and
 - c) one substituent selected from chlorine, bromine, cyano, nitro, $-CO-NH_2$, $-CO-NHCH_3$, $-CO-N(CH_3)_2$, $-NH_2$, $-NH(CH_3)$ and $-N(CH_3)_2$.
17. The compound according to claim 16, wherein R^C is selected from hydroxy, $NHSO_2$ -methyl, $NHSO_2$ -ethyl, $NHSO_2$ -(1-methyl)ethyl, $NHSO_2$ -propyl, $NHSO_2$ -cyclopropyl, $NHSO_2$ -cyclopropylmethyl, $NHSO_2$ -cyclobutyl, $NHSO_2$ -cyclopentyl and $NHSO_2$ -phenyl.

18. The compound according to claim 17, wherein R^C is hydroxy.
19. The compound according to claim 17, wherein R^C is $NHSO_2$ -cyclopropyl.
- 5 20. The compound according to claim 1, wherein:
- B** is (C_{3-8}) alkyl, (C_{5-6}) cycloalkyl, or phenyl, each of said groups being optionally mono- or di-substituted with methyl;
- Y** is H or methyl;
- R³** is (C_{1-6}) alkyl or (C_{3-7}) cycloalkyl, said cycloalkyl being optionally substituted by 1 to 3 substituents selected from (C_{1-4}) alkyl;
- 10 **R²** is R^{20} , $-NR^{21}R^{22}$, $-NR^{22}COR^{20}$, $-NR^{22}COOR^{20}$ and $-NR^{22}CONR^{23}R^{21}$, wherein R^{20} is selected from methyl, ethyl, n-propyl, i-propyl, n-butyl, 1-methylpropyl, 2-methylpropyl, *tert*-butyl, 2,2-dimethylpropyl, 1,1-dimethylpropyl, 1,2-dimethylpropyl, 1,2,2-trimethylpropyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl; all of which optionally being substituted by 1 to 3 substituents selected from methyl and ethyl;
- 15 **R²¹** is H or R^{20} ;
- R²²** and **R²³** are independently selected from H and methyl;
- 20 **R²⁴** is $-OCH_3$ or $-N(CH_3)_2$;
- R¹** is ethyl or vinyl; and
- R^C** is hydroxy, $NHSO_2$ -methyl, $NHSO_2$ -ethyl, $NHSO_2$ -(1-methyl)ethyl, $NHSO_2$ -propyl, $NHSO_2$ -cyclopropyl, $NHSO_2$ -cyclopropylmethyl, $NHSO_2$ -cyclobutyl, $NHSO_2$ -cyclopentyl or $NHSO_2$ -phenyl.
- 25 21. The compound according to claim 1, wherein **B** is selected from 1,1-dimethylethyl, 1,1-dimethylpropyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, 1-methylcyclopentyl, 1-methylcyclohexyl and phenyl; **Y** is H; **R³** is selected from 1,1-dimethylethyl, cyclopentyl, cyclohexyl and 1-methylcyclohexyl; **R²** is $-NHR^{21}$ or $-NHCOR^{20}$, wherein R^{20} and **R²¹** are independently selected from: methyl, ethyl, n-propyl, i-propyl, n-butyl, 1-methylpropyl, 2-methylpropyl, *tert*-butyl, 2,2-dimethylpropyl, 1,1-dimethylpropyl, 1,2-dimethylpropyl, 1,2,2-trimethylpropyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, all of which optionally being mono- or di-
- 30

substituted with methyl or ethyl; R^{24} is $-OCH_3$; R^1 is vinyl and R^c is hydroxy or $NHSO_2$ -cyclopropyl.









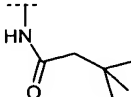
22. The compound according to claim 21, wherein **B** is selected from 1,1-dimethylethyl, 1,1-dimethylpropyl, cyclopentyl, cyclohexyl and phenyl; R^3 is selected from 1,1-dimethylethyl and cyclohexyl, R^c is hydroxy and **Y**, R^2 , R^{24} and R^1 are defined as in claim 21.

23. The compound according to claim 1, of the formula



wherein **B**, R^3 , R^2 , and R^{24} are defined according to the following table

Cpd.	B	R^3	R^2	R^{24}
11				$-OCH_3$
12				$-OCH_3$
13				$-OCH_3$
14				$-OCH_3$
15				$-OCH_3$

Cpd.	B	R ³	R ²	R ²⁴
16				-OCH ₃
17				-OCH ₃
18				-N(CH ₃) ₂

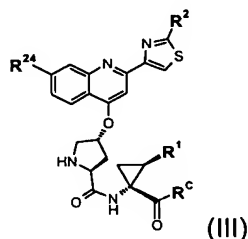
24. A pharmaceutical composition comprising an anti-hepatitis C virally effective amount of a compound of formula I according to claim 1 or a pharmaceutically acceptable salt or ester thereof, in admixture with at least one pharmaceutically acceptable carrier medium or auxiliary agent.
25. The pharmaceutical composition according to claim 24 further comprising a therapeutically effective amount of at least one other antiviral agent.
26. The pharmaceutical composition according to claim 25, wherein said antiviral agent is ribavirin.
27. The pharmaceutical composition according to claim 25, wherein said antiviral agent is selected from another anti-HCV agent, HIV inhibitor, HAV inhibitor and HBV inhibitor.
28. The pharmaceutical composition according to claim 27, wherein said other anti-HCV agent is selected from immunomodulatory agents, other inhibitors of HCV NS3 protease, inhibitors of HCV polymerase and inhibitors of another target in the HCV life cycle.

29. The pharmaceutical composition according to claim 28, wherein said immunomodulatory agent is selected from α -interferon and pegylated α -interferon.
- 5 30. The pharmaceutical composition according to claim 28, wherein said inhibitor of another target in the HCV life cycle is selected from inhibitors of: helicase, NS2/3 protease and internal ribosome entry site (IRES).
- 10 31. A method for the treatment or prevention of a hepatitis C viral infection in a mammal by administering to the mammal an anti-hepatitis C virally effective amount of a compound of formula I according to claim 1, or a pharmaceutically acceptable salt or ester thereof.
- 15 32. A method for the treatment or prevention of a hepatitis C viral infection in a mammal by administering thereto an anti-hepatitis C virally effective amount of a compound of formula I according to claim 1; or a pharmaceutically acceptable salt or ester thereof in combination with at least one other antiviral agent.
- 20 33. The method according to claim 32, wherein said antiviral agent is ribavirin.
34. The method according to claim 32, wherein said other antiviral agent is selected from another anti-HCV agent, HIV inhibitor, HAV inhibitor and HBV inhibitor.
- 25 35. The method according to claim 34, wherein said other anti-HCV agent is selected from immunomodulatory agents, other inhibitors of HCV NS3 protease, inhibitors of HCV polymerase and inhibitors of another target in the HCV life cycle.
- 30 36. The method according to claim 35, wherein said immunomodulatory agent is selected from α -interferon and pegylated α -interferon.
37. The method according to claim 35, wherein said inhibitor of another target in

the HCV life cycle is selected from inhibitors of: helicase, NS2/3 protease and internal ribosome entry site (IRES).

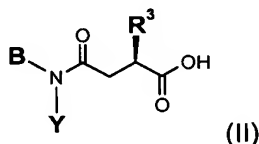
38. A method of inhibiting the replication of hepatitis C virus by exposing the virus to a hepatitis C viral NS3 protease inhibiting amount of the compound of formula (I) according to claim 1, or a pharmaceutically acceptable salt or ester thereof.

39. A process for the preparation of a compound of formula (I) according to claim 1 comprising the step of coupling a peptide of the formula (III):



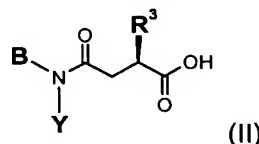
wherein R^c is $-O-CGP$ or $-NH-SO_2R^s$; and R^{24} , R^2 , R^1 , and R^s are defined as in claim 1 and **CPG** is a carboxyl protecting group;

with a succinic acid moiety of formula (II):



wherein **B**, **Y** and R^3 are defined as in claim 1.

40. A succinic acid derivative of the formula (II):



wherein **B**, **Y** and R^3 are defined as in claim 1.

41. The succinic acid derivative according to claim 40 wherein **B** is (C_{2-10}) alkyl, (C_{3-7}) cycloalkyl, (C_{1-3}) alkyl- (C_{3-7}) cycloalkyl or phenyl,

a) wherein said cycloalkyl, alkyl-cycloalkyl and phenyl may be mono-, di- or

- tri-substituted with (C₁₋₃)alkyl; and
- b) wherein each of which may be mono- or di-substituted with substituents selected from hydroxy and O-(C₁₋₄)alkyl; and
- c) wherein each of said alkyl groups and phenyl may be mono-, di- or tri-substituted with fluorine or mono-substituted by chlorine or bromine, and
- d) wherein in each of said cycloalkyl groups being 5-, 6- or 7-membered, one or two -CH₂-groups not being directly linked to each other may be replaced by -O- such that the O-atom is linked to the N atom to which B is attached via at least two C-atoms
- and Y and R³ are defined as in claim 40.
42. The succinic acid derivative according to claim 41 wherein B is selected from 1,1-dimethylethyl, 1,1-dimethylpropyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, 1-methylcyclopentyl, 1-methylcyclohexyl and phenyl and Y and R³ are defined as in claim 41.
43. The succinic acid derivative according to claim 40 wherein Y is H and B and R³ are defined as in claim 40.
44. The succinic acid derivative according to claim 40 wherein R³ is (C₁₋₆)alkyl, (C₃₋₇)cycloalkyl or (C₁₋₆)alkyl-(C₃₋₇)cycloalkyl, wherein each of said cycloalkyl groups are optionally substituted by 1 to 3 substituents selected from (C₁₋₄)alkyl and B and Y are defined as in claim 40.
45. The succinic acid derivative according to claim 44 wherein R³ is selected from 1,1-dimethylethyl, cyclopentyl, cyclohexyl and 1-methylcyclohexyl and B and Y are defined as in claim 44.
46. An article of manufacture comprising packaging material contained within which is a composition effective to treat an HCV infection or to inhibit the NS3 protease of HCV and the packaging material comprises a label which indicates that the composition can be used to treat infection by the hepatitis C virus or to inhibit the NS3 protease of HCV, and wherein said composition comprises a compound of formula (I) of claim 1 or a pharmaceutically acceptable salt or

ester thereof.